SECTION IV - PROPOSED SYSTEM AND BUSINESS PROCESSES

A. INTRODUCTION

Traditionally, this section of the RFP document includes a description of the proposed VoteCal system. The State has chosen not to describe the type of system to be proposed, but instead has elected to provide a description of the business processes (and associated activities) and business requirements that the system will support. Each Bidder should review the business processes and develop its own system solution to satisfy the stated business processes and requirements.

The business functional requirements are documented in Section VI - Project Management, Business, and Technical Requirements, while the business processes are defined in this section as the Business Model. The Bidder's proposed solution will support all of the processes described in this Business Model and meet the business requirements contained in Section VI – Project Management, Business, and Technical Requirements. Considerations should also be given to the information provided in Section III – Current Systems and Opportunities, when developing a proposed solution.

B. VOTECAL PROJECT SCOPE

At minimum, the State requires a voter registration database that is fully compliant with all applicable federal and state laws and regulations. The Secretary of State (SOS) will not limit proposals to a particular architecture, nor to specific component products, except to the extent that the capabilities and limitations of certain architectures or products affect the ability to meet the legal requirements.

However, it is critically important that government maintain complete and transparent control over the election process, including voter registration. SOS will require that it obtain possession of full and permanent rights to use, maintain and modify all VoteCal System and election management system (EMS) application software used in the delivered system, except operating system, database management, and utility components.

The major factors driving the Help America Vote Act of 2002 (HAVA) compliance solution are the specific compliance requirements, as understood by the State of California. In particular, the requirements for a uniform and centralized database to serve as the official list preclude solutions where information in county systems was simply exported to a central database subsequent to data entry. Likewise, the desire to minimize disruption to county business processes discounts an approach that requires initially replacing all existing county systems.

The VoteCal system will incorporate four major components as described in the table below:

Table IV.1 Major Components of Proposed Solution

Component	Description
1	VoteCal System
2	Interfaces to External State Agencies
3	Modification to Existing County EMS Systems
4	Integration of VoteCal and County EMS Systems

- **VoteCal System** – A new VoteCal System (database and applications) will be implemented to serve as the single, official statewide database of voter registration information. Additions or changes to voter registration (VR) records will be captured as they are entered by state or county election workers. The VoteCal database application will possess functionality for assigning

unique identifiers, detecting duplicate VR records and detecting other types of validation errors. The database will have a user interface for SOS staff to configure and manage the application. The database will be architected and implemented for security appropriate to the sensitivity and privacy of the data. The database will provide complete logging and auditing capabilities, so that all changes to database content are recorded and traceable to the user or function that made the change.

- **Interfaces to External State Agencies** – The VoteCal database will be connected to external state organizations, including the California Department of Motor Vehicles (DMV), the California Department of Public Health (CDPH), and the California Department of Corrections and Rehabilitation (CDCR) for voter registration identification and list maintenance purposes. These interfaces will be on-line or batch depending on the business function. The DMV (and through the DMV, the Social Security Administration (SSA) interface for identification verification has been implemented using XML/SOAP; SOS would prefer to preserve the existing DMV interface.

  The CDPH, CDCR, DMV, National Voter Registration Act (NVRA), and National Change of Address (NCOA) interfaces have been implemented to input batch files provided by the external agencies. These interfaces may be replaced with interactive solutions if the contractor assumes responsibility for all changes at both sides of the interface.

- **Modification to Existing County (EMS or VR) Systems** – County workers will continue to perform most routine data entry and update functions for the processing of voter registration. The existing county EMS will either be remediated or replaced to ensure that county users interact directly with VoteCal for all additions and updates to VR information. Updates to VR information may make use of the remediate screens in the county systems, but record updates will be applied directly to the VoteCal database. This will create an information flow wherein any change (i.e., add, change or deletion) to VR information will be applied directly to the VoteCal database.

  Downstream systems, if any, (e.g., county EMS) will obtain VR information from the VoteCal system as the exclusive source. County systems, if used, that require VR information to be stored locally to operate will be remediated to ensure that all VR information is derived from VoteCal.

- **Integration of VoteCal and County Systems** – Middleware or other suitable technology may be used to facilitate connectivity between county systems and VoteCal and to support distribution over a wide area network.

Figure IV.1 illustrates the SOS VoteCal Scope. The complete system will be designed and implemented to ensure a high level of availability, and the ability to handle anticipated workloads during periods of peak system usage. It is intended that the future business process will be largely similar to the current business processes. County users will need to adapt business processes to use common data definitions and code tables established by the State for VR information. County business processes will also be adapted to deal with exceptions that result from changes to VR information that are initiated within the VoteCal database (e.g., assignment of unique number, detection of ineligible voter).

Business processes at the SOS will also be largely similar to existing processes, but will need to be adapted to accommodate the new VoteCal database as well as additional data and business process analysis and oversight. The State will also need to support the new integration technologies introduced as a result of this project.

Figure IV.1 – Diagram of VoteCal Project Mandatory and Optional Functions

VoteCal SYSTEM – MANDATORY FUNCTIONALITY
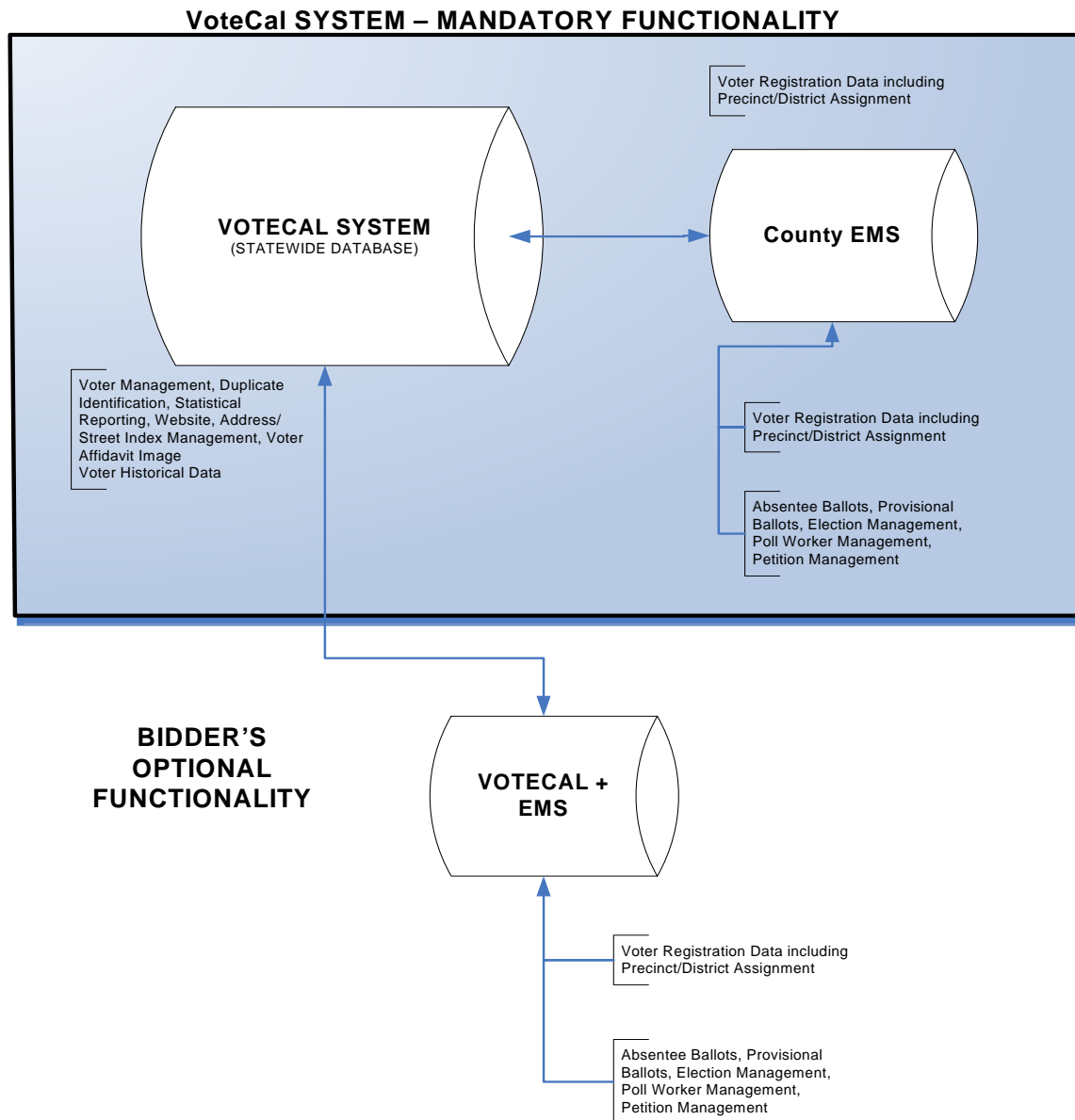
C. VOTECAL PROJECT GOALS AND OBJECTIVES

The target goals and objectives for the project's business solution are to ensure that the State's business needs are met and that the HAVA statutory and operational responsibilities and requirements are achieved. To bring the State into full HAVA compliance, the solution must include the following characteristics:

- Serve as the single system for storing and managing the official list of registered voters throughout the State;

- Contain the name and registration information of every legally registered voter in the State;

- Contain a unique identifier for each legally registered voter in the State;

- Coordinate with other agency databases within the State (DMV, CDPH, and CDCR);

- Allow any election official in the State, including any local election official, immediate electronic access to information in the statewide voter registration system;

- All voter registration information obtained by any local election official in the State will be electronically stored in the VoteCal System on an expedited basis at the time the information is input by the local official;

- The chief State election official will provide such support as may be required so that local election officials are able to enter information expeditiously; and

- Serve as the source for the official voter registration list for the conduct of all elections for Federal office in the State conducted under the California elections code.

The new VoteCal system will enable California to comply with HAVA general system requirements. In addition, counties and their vendors will be required to modify their specific EMS and business processes in order to support this new system and comply with federal HAVA mandates.

The new VoteCal system will require immediate update of voter registration data in the central system as it is entered in the counties, which will improve the currency of data in the single database. List maintenance activities will be standardized to improve data accuracy as well. As new voter registration information is entered into the State system, the system will automatically detect duplicate voters and allow staff to update existing records and combine duplicate records as appropriate, reducing the percentage of duplicate/inaccurate records and preserving a voter's historical record in the database as a voter moves from county to county.

The new VoteCal system will automate the duplicate check function, using the unique identifier assigned every voter to detect duplicate records within the database whenever new data is entered. This functionality will standardize the removal of duplicate records from the system and improve data integrity.

D. BUSINESS BENEFITS

SOS has identified Strategic Benefits that can potentially be achieved through implementation of the VoteCal solution. They are:

- Reduce statewide costs for system support;

- Provide flexibility to implement legal and business improvements; and

- Improve timeliness, accuracy, and availability of data and reports for statewide use.

The new business solution will provide the business process as discussed in this section as well as meet the technical and business requirements in Section VI – Project Management, Business and Technical Requirements. All of the processes, functions, and requirements are mandatory.

RFP Section III.B contains a complete description of the business processes and functions that the proposed solution will address. Additionally, the proposed solution will meet all of the HAVA requirements. (Refer to the Bidder's Library for a complete list of HAVA requirements). In summary, the VoteCal solution will:

- Implement a Single, Uniform, Official, Centralized, Interactive, Computerized List — HAVA Section 303(a)(1)(A) requires that the State (through SOS) implement a computerized statewide voter registration list that is: single, uniform, official, centralized, interactive, defined, maintained

- and administered at the State level, and contains the name and registration information of every legally registered voter in the State.

- Provide for Data Accuracy and Timeliness — HAVA Sections 303(a)(2)(A) and 303(a)(4) requires the system to include provisions to ensure voter registration records are accurate and updated regularly. List maintenance shall be performed by "the appropriate State or local election official," in accordance with NVRA provisions.

- Facilitate Removing of Ineligible Voters from the List — HAVA Sections 303(a)(4)(A) and 303(a)(2)(A)(ii) require reasonable effort be made to remove ineligible voters from the voter registration list. For removing ineligible voters from the list, the State shall coordinate with DMV for address changes, CDPH for death notification, and CDCR for felony status.

- Eliminate Duplicate Records and Ensuring Data Integrity — HAVA Section 303(a)(2)(B) requires list maintenance will be conducted in a manner that insures all legally registered voters are in the computerized list; only voters not legally registered or not eligible to vote are removed from the list; and duplicate names are eliminated from the list. In addition, HAVA Section 303(a)(4) requires the State to employ safeguards to ensure legally qualified voters are not removed in error. List maintenance activities are to be conducted in accordance with NVRA provisions.

- Assign a Unique Identifier — HAVA Sections 303(a)(5)(A)(i) – (iii) require all new (and renewing) registrants to provide their driver's license number (DL#). If they have no DL#, they will provide the last four digits of their SSN (SSN4). If they have neither DL# nor SSN, the system will assign them a unique identifier to use as a voter registration ID number. No registration is valid unless/until the State verifies these ID numbers.

E. PROPOSED VOTECAL SYSTEM FUNCTIONALITY AND CONSTRAINTS

The new SOS VoteCal Statewide Voter Registration System vision for process and functionality is described in this section.

1. *Summary*

The SOS is interested in meeting the HAVA Voter Registration Database (VRDB) requirement with an approach that features a functional centralized voter registration system in a hybrid environment. Counties can participate using a modified version of their current EMS, or they may use a fully featured and integrated voter registration and election management application that may, optionally, be included in VoteCal. As this is a solution-based procurement, the SOS requires proposals to achieve business outcomes rather than meet technical specifications. However, the SOS will indicate when it prefers conformance to certain technical standards, protocols and architectures that it believes will help the system to work with other State environments or will reduce the lifecycle cost of ownership. The Final Proposals will be evaluated to provide the best overall value to the State in meeting statutory and policy requirements at the lowest overall cost to the State.

2. *County Systems*

HAVA requires that SOS establish and maintain a single, statewide automated voter registration list. However, most voter registration activities are and will remain the responsibility of county elections offices. The counties currently maintain independent voter registration databases that are usually part of more comprehensive EMS. In addition to voter registration, these systems provide functions that are inherently local, such as managing and verifying the eligibility of polling place workers. Moreover, these county EMSs vary in functionality, complexity and overall robustness as the county voting populations vary from less than one thousand to several million.

Since January 2006, SOS has achieved interim compliance with the HAVA voter registration requirement using a central database that accepts periodic uploads of data from each county

system. SOS will allow counties that so choose to continue to upload their data to the central voter registration database from their EMS.

SOS will require that the interface between the new centralized database and the independent county EMSs be extended beyond the current interim system by requiring the new VoteCal System to upload new data such as voter registration card (VRC) images. Furthermore, the system must synchronize updates on an individual-record basis so that updates are not completed until a positive response has been received from the central database specifying the unique identification number (UID) to be used for the new registration. Any potential duplicate records for the same voter in VoteCal must be identified for resolution as part of the process.

For counties that cannot continue to use—or choose not to use—their current EMS to integrate with VoteCal, the SOS proposes to acquire an optional, fully functional county EMS application that will integrate fully with the centralized database and will include all required local election management functionality, so that counties may migrate to the use of this system instead of their current environment. The new system, known as the VoteCal EMS, will provide the capacity and functionality to support all counties in this manner. The VoteCal EMS is not a requirement of this procurement, but may be proposed by bidders as an independent option; bidders may also choose not to include the VoteCal EMS in their proposal.

3. *Independent County EMS Support*

For counties that continue to participate in the centralized VoteCal database using their existing EMS, the VoteCal central database system will provide support for data transfer and synchronization so that all records in the central database are fully standardized. The system will accept individual record add, delete and update transactions from each county EMS, and provide near-real-time response to the county system that the record was either accepted and loaded to the database, rejected for failure to meet data standards or verification requirements, or accepted with the requirement that the county address certain deficiencies in the record.

Any fatal or informational deficiencies found in the transactions will be clearly indicated to the county in the response sent to the county. Additionally, the system will be able to apply voter registration changes that do not originate within the county, such as re-registrations in another county or registration through the DMV motor voter program, and notify the county of such changes for automatic update in the county system or for county review and confirmation as appropriate, based on the confidence of the source transaction.

Wherever independent counties are required to interact with VoteCal to process notifications or lists or to input data, VoteCal ~~may either~~must provide a workstation browser-based interface, ~~or may~~ as well as develop an XML-based application programming interface (API) for integration with the independent EMS so that the same function can be performed by users within the local EMS application. ~~If a function is implemented through a browser interface, the Bidder's proposed system will also provide an XML-based application programming interface (API) so that the independent EMS may independently integrate the function later.~~ The browser-based user interface directly to VoteCal will be implemented in a manner to automatically ensure that users are always using the most current approved version of software code.

VoteCal will generate all polling place rosters and supplemental rosters, and transmit those rosters in formats suitable for either local print by the counties or for use in electronic poll books. VoteCal will accept and apply to voter registration voting participation histories relevant data received from the counties after each statewide or federal election.

The county EMS will be required to upload VRC and signature images with each registration record added or updated, in the format in which they are currently stored at the county; the system will convert those images as necessary.

County EMS systems will create and store, and will upload at least monthly to the State, an audit file that records when each record was created, modified or deleted, the change made to the record, and the specific user or program, date and time of each change to any voter registration record.

Currently, eight (8) different EMS products are in use by the 58 counties; however, over 98% of the State's registered voters reside in counties supported by a county EMS from either DIMS or DFM. The System Integration (Bidder) contractor will be required to develop a standard interface for communication with the county EMS systems and to develop or modify all relevant data standards and specifications for use with the new central database. Counties will be required to acquire and maintain an EMS that is compliant with these standards and specifications, or to convert to using the centralized database. The State system interface to counties will be implemented as a published, open XML-based format. The Bidder will not be responsible for the compliance of the county EMS, but will be responsible for ensuring that its system and interfaces conform to the published specifications and documentation accepted by SOS and for reasonable acceptance testing of the interface with the county staffs and contractors.

4. *VoteCal System Processing and Functionality*

(a) Unique Identifier (UID)
VoteCal will assign a UID for each new registered voter, and verify and assign a corrected UID for each re-registered voter if the existing UID does not comply with specified rules. The UID will normally be the California driver's license number or the California Identification Card number, known collectively as the DL/ID. Under specified circumstances, the UID may be instead derived from name, date of birth (DOB), SSN4 and address information.

Before either a DL/ID or SSN4 may be used in the UID, those numbers will be checked against the DMV and/or the SSA ID validation system. This is an existing system, providing a real-time interactive interface based upon XML. All business rules for matching against the DMV and SSA records are implemented in the DMV/SSA validation system. VoteCal will generate a properly formatted query to the DMV/SSA validation system for each new or updated voter registration that does not include a UID based on a validated DL/ID. VoteCal will accept and appropriately assign the UID based upon the response from DMV/SSA, which will indicate whether a voter-provided or found DL/ID or voter-provided SSN4 is to be used in the UID.

The algorithm for generation of a UID that is not based on the DL/ID will be such that the registered voter can be identified as the same person when the voter re-registers, without requiring that the voter knows or provides that UID. The SOS will concur in the function of this algorithm before implementation begins.

Only one valid voter registration record may be assigned any UID. When, during registration update or when a new registration appears to require the assignment of an existing UID to a new voter registration record, VoteCal will recognize only one such record as valid, and will provide appropriate notifications to help SOS ensure that all such duplicates are resolved in a timely manner.

(b) Voter Identity Matching
VoteCal will receive identification information from a variety of sources, including new or updated voter registrations processed by counties from received VRC, DMV voter registration and address updates, NCOA files, CDPH death notifications, county Office of Vital Statistics death notices, local court conviction records, and CDCR felon files. Each of these sources will contain different combinations of voter identification information (e.g., name, address, date of birth, DL/ID, gender, SSN4) and each source will vary in the reliability of the information.

VoteCal will provide a highly accurate method of determining when the person described by the external information source matches an existing registered voter. VoteCal will also provide the ability to identify existing voter registration records that may be for the same person even though they have been assigned different UIDs.

SOS is interested in Bidder proposals for addressing this functionality, but anticipates that the process may operate in the following manner:

o   For each data value (e.g., first name, date of birth, address), SOS administrators will have the ability to specify one or more matching criteria; e.g., first four characters match, all characters match exactly, all characters match exactly with one pair of characters transposed, etc.

o   SOS will assign a confidence level to groups of matching criteria (e.g., first name, last name and date of birth). SOS will then assign a threshold confidence level required for automatic and manual match processing for each identity matching function, e.g., searching for existing registration records when processing a new VRC, matching death notices against existing registration records; searching for potential duplicate registrations within the system. Matches that meet the automatic confidence threshold will be processed without further operator action (although a method will be provided to review and reverse such automatic actions.) Matches that do not meet the automatic threshold but meet the manual threshold will be presented to the appropriate authorized state or county user for evaluation before application or rejection.

(c) County Registration Processing
When a new voter registration or re-registration is processed by the county, the record will be sent to VoteCal. The registration record may either be sent as an interactive transaction record from an independent county EMS or received directly from the optional VoteCal EMS.

For all registration processing, required notifications and confirmations sent to counties will support both electronic messages to independent county EMS and direct communication to the optional VoteCal EMS. A proposal for the VoteCal EMS must include, and the independent county EMS will be modified by their owners (with HAVA funding) to provide, mechanisms to correctly process and respond as required to these notices and confirmations.

VoteCal will provide the ability to compare information from a new registration to existing records, and present a list, in order of match confidence, so that the authorized county user may accept an existing record for update, or may choose to add a new record. The unique ID will be verified with DMV/SSA before either updating or adding a record. If an existing record is selected for update that causes the registration county to change, the prior county, if not using the VoteCal EMS, will be notified to either cancel the record, or reject the update so that the new county creates a new registration instead.

Prior to sending any confirmation of new or updated registration, VoteCal will attempt to match the new registration data to records in the cumulative ineligible felon and deceased files. If a record match meeting the automatic match threshold is found, the record will be cancelled in VoteCal and notice sent to the new county and prior county, if any, that the registration is cancelled. Both counties will have the ability to review and request reversal of cancellation, and SOS administrators will have the ability to review and resolve such requests. If a record match meeting the manual match threshold is found, notice will be sent to the new and prior county, if any, to review the record and either confirm or reject the match. If confirmed, the record(s) will be cancelled; if rejected, the new and existing records will be processed as if no match had been found. Any rejected match will be noted on the record to prevent the same match from being automatically applied again.

VoteCal will support receipt of new or updated registrations from DMV in either a file or interactive format. Processing will proceed as above, with all notifications sent to the appropriate counties and not to DMV.

(d) Confidential Records

The system will provide secure support for confidential voter records under various statutes, where portions of the voter's record, such as address and telephone number are confidential. SOS requires that confidentiality be implemented so that programs and users may access confidential data only with specific authority and with explicit direction. It is not acceptable to implement record confidentiality solely by applying a confidentiality attribute to the record; users and programs that are developed incorrectly or in ignorance of the confidentiality of a record should not be able to access or report confidential data.

(e) External Interfaces

The SOS requires that all custom interfaces be open and implemented using XML and Service Oriented Architecture principles, unless the interface partner (e.g., DMV, CDPH,) is unable to support XML.

The interface to the DMV for CDL verification, and through DMV to the SSA for SSN4 verification, has already been developed and implemented using XML. DMV requires that only a single, SOS source use this interface. SOS currently provides, and the Bidder will replace, a service to accept verification transactions from the county EMS and the integrated VoteCal EMS application, and to route those transactions to DMV and correctly process the responses. This service will be implemented using secured communications with the county EMS. The service will also maintain detailed logs of each verification attempted and the result received, with the ability to search and view specific transaction records, and to generate specified summary reports.

CDCR currently provides a monthly file of persons who have become ineligible to vote because they are incarcerated or paroled felons, and of those persons who have regained their eligibility at the completion of their sentence. VoteCal will accept and apply this information to create a cumulative file of all currently ineligible felons.

CDPH currently provides a periodic electronic list of California residents who have died since the last report. VoteCal will accept and accumulate this information for processing, so that a cumulative deceased file is maintained in VoteCal.

The system will include a service to compare the mailing addresses of registered voters to USPS NCOA data. All registered voters will be checked against NCOA updates at least once each month. Depending on the confidence level established by the SOS for such matching, the system will automatically apply the match and notify the appropriate county, or shall generate a notice to the county of the potential match for review and resolution by county officials. The central database system will also provide a mechanism for State administrators to monitor and follow-up on any unresolved felon, death and NCOA transactions sent to the counties for review and resolution.

(f) VoteCal List Maintenance

VoteCal will provide the ability for SOS administrators to initiate a process to compare new or all records in the cumulative felon file or cumulative deceased file against all existing voter registration records. VoteCal will automatically cancel, and send notice to the county of registration, when the automatic match threshold has been met. VoteCal will send a list of registrations in each county that meet the manual match threshold to the county so that the county may view the match and match confidence level. The county will have the ability to process the list so that each match is either accepted or rejected. If a match is accepted, the voter will be cancelled in VoteCal and notice sent to the county; if the match is rejected, the record will be updated in VoteCal so that the match can be bypassed in future checks.

VoteCal will provide the ability to search for duplicate voter registration records within the VoteCal database. The process will allow the SOS administrator to trigger the process, set the match threshold for that process, and select whether to include or exclude records with validated UIDs. VoteCal will send a list of registrations in each county that meet the match threshold to the county with the earlier registration date for each match so that the county may view the match and match confidence level. The county will have the ability to process the list so that each match is either accepted or rejected. If a match is accepted, the records will be merged into the record with the latest registration date (although if the record with the earlier registration data contains voting activity after the later registration date, the match will be suspended and the SOS administrator notified).

(g) Motor Voter Support

VoteCal will be designed to accept voter registration data from DMV using an XML service-point-based interface. This interface may be designed by the Bidder, but will include all voter registration data as entered on a standard VRC card, plus a TIFF image of the VRC and a digitized signature. The system will attempt to match such registrations against existing voter registration records and to attempt to apply such registration changes, including assignment of a voter to a precinct based on the residence address, based on the general established business rules for processing new registrations and re-registration. Based on SOS established confidence levels for such matching, the system shall either automatically apply such registration transactions and send notices to the appropriate counties of the registration addition or update, or the system shall send notice of the potential registration transaction for county review and resolution.

(h) Public Website

VoteCal will provide a public website that allows voters to verify the status of their voter registration, including political party affiliation and whether they are a permanent ~~absentee~~vote-by-mail voter. VoteCal will also be capable of supporting on-line voter registration capability on the public website, in the eventuality that supporting statute is adopted in California in the future. The system will be configured to establish a secure session with the user, request-identifying information, and to report the registration status, county, precinct and voting location for that voter. The system will not respond with any private or identifying information.

VoteCal will allow voters who have voted by ~~absentee~~vote-by-mail or mail ballot to determine the status of that ballot on an ongoing basis. The system will also allow voters who have cast a provisional ballot in an election to determine whether that provisional ballot has been counted and, if not, the reason it has not.

This system will support 24/7 operations with no more than two (2) hours scheduled downtime each week.

The public website shall be designed for full accessibility, and will comply at minimum with W3C Level 2 and relevant Americans with Disabilities Act (ADA) guidelines, as well as VRA language requirements.

(i) Images
SOS requires that the system be able to capture, search, and retrieve VRCs via a standard web browser interface. The system shall store online for immediate retrieval all such VRC

images. The Bidder will import, converting as necessary, all existing VRC images at all counties.

Counties will upload the VRC image for all VRCs received on an on-going basis after system implementation. The optional VoteCal EMS system will provide workflow-controlled processes for capture, verification and acceptance of new images, either as taken or during batch upload. The VoteCal EMS will be able to separately display the signature image from the VRC and present it with voter registration data for use in verifying signatures on petitions, ~~absentee~~vote-by-mail ballots and similar activities.

5. ***VoteCal Implementation Services and Technical and Support Considerations***

   (a) **Continuity of Operations (COOP)/ Availability**

   The SOS requires that the complete system, including all services provided to counties through the secure delivery of application and system data to the county demarcation, be designed so that no event or events with related cause short of a widespread disaster to the SOS facility shall interrupt the full system services to all customers for more than four (4) hours in any one event or over four (4) events in any six-month period. "Widespread disaster" means an event preventing human, power, or network access to at least two dispersed server sites as proposed. The complete system will be designed, implemented and tested so that recovery to full system functionality from any single-site event is complete in less than 1 hour from the time the event occurred. The system will continue to operate with at least one half of full workload and no greater than double normal transaction and batch processing times immediately following the loss of any one of at least two central server facilities.

   (b) **Security**

   Data will be encrypted whenever stored in non-volatile memory, and whenever in transit over network links or through facilities not contracted directly to SOS. Direct user access to the system will require ~~System access will support a requirement for~~two factors of identification, one of them requiring access to a specific location or possession of a physical object.

   All access will be controlled so that users and administrators are assigned roles, and that the roles are associated with the rights and access privileges necessary for that role, with sufficient granularity that no user is assigned rights that the user does not need.

   All backup copies of data, including images, will be encrypted. SOS prefers that backups be normally taken to spinning hard disk storage, and not to media intended to be portable.

   With the exception of public web servers, no component of the system, including end-user workstations and printers will require Internet access for full functionality.

   All server components will be configured to the minimum level necessary for their function, with all unnecessary programs and services removed. All servers will otherwise be hardened to industry best practices, and delivered with procedures for server hardening after system upgrade or replacement.

   (c) **Usability**

   The voter registration system will be able to support periods of very high workload as during the close of registration before a major election. During those periods, many counties rely on temporary workers or workers redirected from other tasks.

(d) Implementation and Training

SOS intends the pilot testing of the system to be conducted during the November 2009 local elections. Full implementation of the system must be completed with all counties by February 2010, whether they are integrating with their local EMS or converted to use the optional VoteCal EMS application.

SOS intends all SOS and county users to be trained and provided all necessary materials for use and support of the VoteCal System, including the optional VoteCal EMS, for initial operation. Additionally, key SOS staff will be trained to provide ongoing user training post system implementation. (It is assumed that the independent county EMS vendors will also provide appropriate training to their county users on the actual modifications they make to their systems to bring those systems into compliance with VoteCal.)

Support documentation will be provided to SOS staff to provide helpdesk and remote technical support to these counties on an ongoing basis.

(e) Maintenance and Operations

SOS intends that the completed system ultimately be operated and maintained by State personnel. All hardware and all licenses are to be the property of the State upon acceptance.

The initial one year of maintenance and operation will commence upon acceptance of the completed system. The Bidder may not be awarded a contract for further maintenance and operations of the system unless all required documentation has been updated and delivered.

(f) Ongoing Software Support

Upon the conclusion of the initial one-year warranty, the SOS, at its option, may choose to contract with the Bidder for five (5) years of ongoing maintenance of the application software to include software defects, as well as necessary modifications to accommodate updates to the code to accommodate version upgrades to third-party products included as part of the bid.

(g) Data Center

SOS intends to place primary server equipment at the SOS facility, with a backup server environment installed at the co-location facility provided by the Department of Technology Services (DTS). The equipment at the two facilities should be configured to support the required availability by establishing near-real-time synchronization of data between the two facilities.

(h) Code Ownership and Source Code Disclosure

Because of the importance and sensitivity of the voter registration process, SOS requires that it obtain full use, access and modification rights to all application software provided in response to this bid.

(i) Hardware and Third-Party Software Ownership

SOS will own all hardware and software licenses provided for this system. The Bidder will identify in its proposal all hardware and software components required for the system. The Bidder will be responsible for providing all hardware support to the level of service required in the contract and attached statement of work.

(j) Third-Party Software Currency and Maintenance

The operating system, database, security, networking, backup, scheduling, utility and other third-party proprietary software proposed for this system must be fully supported by the manufacturer at the time it is delivered and accepted. "Fully supported" means that no end of life has been announced for the product, and the manufacturer will openly market maintenance and support services for the product without restriction.

(k) Network Environment

SOS currently intends to use a private network for connectivity between the server facilities and the counties. However, all network traffic will be encrypted so that Internet facilities may be used at some point in the future.

(l) Backup/Recovery

SOS currently backs up production data and software to a dedicated EMC Network Attached Storage (NAS) device located at its headquarters, with a duplicate copy on an identical NAS located at DTS. SOS uses Legato Networker software for this purpose. SOS uses the local copy for recovery from routine data or program corruption, and for recovery from system storage failures. The remote copy would be used to recover following an SOS headquarters disaster.

It is the intent of the SOS to avoid the use of removable, portable media such as tape cartridges or DVD/ROM for data backup because of the risk of loss of data containing sensitive and private information.

The Bidder will propose a similar mechanism for backup and recovery of the proposed system, either by integrating with the existing SOS backup/recovery environment, or by duplicating or extending the system. All data and software will be backed up using a combination of periodic full and daily incremental copies so that no system event can result in the loss of more than a single day's work. The remote disaster backup facility may be combined with the COOP/OR capability described above.

The proposal will identify all network requirements, and will include all components necessary to connect all new systems to standard Ethernet LANs. SOS will obtain and provide any additional wide-area network (WAN) facilities required.

If proposed, the VoteCal EMS must also include mechanisms for backup/recovery of each local VoteCal EMS system. The solution may rely in part on the use of data stored in the VoteCal database.

(m) Archiving/Purging

VoteCal will include a mechanism to purge and archive selected registrations records so that they are removed from the voter registration list, but so that the removed records may still be viewed and, if necessary, restored to the system.

(n) Audit Logs

Every action that changes the contents of the database in any way will be logged so that the date/time, unique user and program function that made the modification can be identified. Audit logs will be maintained in perpetuity, so a mechanism will be provided to periodically purge the audit log and archive the purged logs to offline storage.

(o) Access Control

All access to the system, for either administrators or end users, will be controlled by user ID and strong password authentication. Access control for users in the central environment shall be through a lightweight directory access protocol (LDAP) compatible directory.

6. *Independent County Support*

For counties that integrate with VoteCal using their local EMS, existing voter registration data will be formatted as required for the VoteCal integration, and then uploaded into the system during the initial integration and deployment of the VoteCal system. After initial integration, all further registration updates (including adds and deletes) will occur on an individual transaction basis.

Further, independent counties integrating with the VoteCal system through their county EMS will be required to upload the audit records from their EMS for all changes to the registration data that occurred within that system. If necessary, county EMS systems will be required to enhance their audit functionality so that every change to every voter registration record, including when the change occurred, the exact change made, and the person or EMS component that made the change, is captured in that audit record. VoteCal will provide a mechanism to consolidate, store, review, archive and purge these audit files.

7. *Public Voter Registration Data Requests*

Certain users, such as political parties and campaigns, researchers and journalists are authorized by statute to obtain lists of registered voters. The VoteCal system will provide support to enter and track such requests, and to produce voter registration data extracts in fulfillment of those requests.

In order to allow SOS to enforce the restrictions on use of voter registration data, the VoteCal System will include the ability to "salt" each data extract with unique, fictitious registration records, and to record which identifying data is in each data extract for use by SOS investigation staff.

8. *VoteCal EMS (Optional)*

(a) **VoteCal EMS Functionality**

The centralized VoteCal EMS system, if this option is proposed and accepted by the SOS, will support all specified voter registration functions so that it can be used by all counties to support their voter registration and related activities. The centralized system should provide the ability to configure the use by each county to optimize its functions, including workflow automation features, for use by counties with widely disparate size and operational procedures. The system will be delivered with the capacity to support all counties in the use of this central EMS, or for all counties to continue synchronization through their existing EMS, or any combination of counties choosing either.

The system will provide a mechanism to segregate records so that each county may view, change and report only those records within its jurisdiction, except as specified for the processing of duplicate registrations or voter registrations associated with a move between counties. SOS system administrators will have the capability to perform all centralized VoteCal EMS and reporting functions against any and all VoteCal records.

(b) **County Equipment**

The VoteCal EMS application must be implemented so that it can be run on existing county workstations using a Microsoft Windows-compatible web browser application, and in a manner that ensures users are always automatically using the most current approved version of software code. the installation of additional software on the county workstations.

Print services will be based on this Internet browser interface, so that existing Microsoft and Novell LAN-attached printers can support all distributed printing requirements (although specialized printers for bulk printing and for non-standard paper stock may be required, as long as network and protocol requirements remain compatible with the existing LAN and wide-area network [WAN]).

(c) Migrating Counties to the VoteCal EMS

If an optional VoteCal EMS application is proposed by the winning bidder and the option is accepted by SOS, SOS does not know how many counties will initially select to convert to that integrated VoteCal EMS application, or whether some counties will retain their existing EMS indefinitely. Nevertheless, SOS would anticipate a long-term program to support and encourage the increased use of a successful VoteCal EMS to better fit the requirements of HAVA.

Should SOS exercise the option for a VoteCal EMS that is proposed as part of the winning bid, SOS may choose to exercise that option concurrent with the development of the VoteCal System or a later point within two (2) years following successful deployment of VoteCal. SOS anticipates that the Bidder will convert a small number of counties during an initial pilot phase of the VoteCal EMS. After acceptance of the VoteCal EMS, the bidder will be responsible for conversion of any additional counties during the contracted maintenance and operations phase of the VoteCal EMS system.

(d) Ballot Pamphlet Addressing

The system will include the ability to generate address lists in a specified format that can be transmitted to the California Department of General Services (DGS) Office of State Publishing (OSP) for addressing Voter Information Guides (Ballot Pamphlets). This process will extract lists of registered voters from the statewide database according to established parameters (e.g., registered in the designated county and currently active) and to process the extract using NCOA, Postal Service (Zip+4, Carrier Route Sort, etc.) and householding (single mailing to same-surnamed individuals at a single address.)

(e) Polling Place Rosters

As the VoteCal system will be the official list of registered voters for each election, all polling place rosters will come directly from the VoteCal system. The system will appropriately select records and include required data for every voting precinct for each election, and will update voter records to indicate they have been included in the roster, for subsequent generation of supplemental rosters. Upon demand, counties will be able to either print the rosters and subsequent supplemental rosters directly from the system onto a standard local MS LAN printer, or to download an extract for formatting and printing by a third party or a third-party application.

The system will also provide support for electronic poll books by providing a standard export of roster information, and will provide a defined application program interface to allow upload of voter history data following each election so that that history information can be applied to each voter's record.

(f) ID Requirements

The system will track those voter registration attributes that support the determination that a voter will show identification at the polling place. The system will provide decision support so that the requirement is automatically identified when statute-based business logic acting on the relevant attributes determines that ID will be shown. The system will support inclusion of the ID requirement on polling place rosters. The system will provide a mechanism for automatic clearance of this requirement when the voting history or relevant attribute has changed.

(g) ~~Absentee~~Vote-by-Mail Voter Support

The system will be able to identify ~~absentee~~vote-by-mail voters, both onetime and permanent, and will provide the capability to track the status of ~~absentee~~vote-by-mail ballots—requested, sent, received and counted—and to provide that information to the voter via the secure website.

(h) Provisional Ballot Support

The system is able to track the status of provisional ballots, including identifying each voter who voted provisionally, whether the ballot was counted partially or completely, and the reason why each provisional ballot was counted, partially counted or rejected.

(i) County EMS Replacement

For those counties that choose to replace their existing EMS with the use of the new state central voter registration capability, the system will provide equivalent functionality.

(j) Data Conversion

The Bidder will convert all data for each county that chooses to use the VoteCal EMS during the pilot or initial implementation period into the format required for use by the VoteCal EMS.

(k) Precincting

The system will provide the ability to define precinct boundaries so that the system can automatically assign the precinct to each voter based upon the address of the voter. Capability will be included for manual entry of precinct information for voters with non-standard addresses.

(l) Poll Worker Management

The system will provide the ability to manage poll workers, including the maintenance of poll worker rosters, assignments, work histories, performance notes, and assignment restrictions. The system will automatically check poll worker rosters against the registration database to verify the eligibility of the poll worker.

(m) Petition Checking

The system will provide a facility to support the checking of petition signatures by retrieving and displaying relevant information, including the image of the voter signature, for comparison with registration data. The system should allow support for petition signature eligibility rules for each petition, so that the worker is notified of the acceptability or rejection reason for each signature based upon entered information.

(n) Election Support

The system will provide the ability to enter, store and report election-specific information, including the type of election, districts and precincts affected, candidates and races, poll worker assignments and other related information.